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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,105	09/17/2003	John Andrew Gladysz	030557	4775

26285 7590 10/16/2007  
KIRKPATRICK & LOCKHART PRESTON GATES ELLIS LLP  
535 SMITHFIELD STREET  
PITTSBURGH, PA 15222

EXAMINER
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PUTTLITZ, KARL J

ART UNIT	PAPER NUMBER
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1621

MAIL DATE	DELIVERY MODE
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10/16/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/664,105

Applicant(s)

GLADYSZ ET AL.

Examiner

Karl J. Puttlitz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-70 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-70 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

KARL PUTTLITZ  
PATENT EXAMINER

10/10/2007

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/27/2007 has been entered.

The outstanding prior art rejection over Vaughn is withdrawn since this reference fails to teach, much less provide a reason for, using the disclosed fluorinated catalysts in a non-fluorous solvent or medium, as required by the instant claims.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. 20050015936 based on an application by Eckert et al. (Eckert) in view of Crystallization in Kirk-Othmer Encyclopedia of Chemical Technology Copyright © 2001 by John Wiley & Sons, Inc. (Kirk Othmer).

Eckert teaches embodiments such as a method of conducting a reaction using a fluorinated compound in an organic solvent, the method comprising applying carbon dioxide gas to the organic solvent at a pressure effective to solubilize the fluorinated compound during the reaction. In one embodiment, the solvent is non-halogenated. The pressure of the carbon dioxide gas is for example in the range of 40 to 90 bar. The fluorinated compound is for example a catalyst. Optionally, a plurality of reactions are conducted, wherein, for example, different reaction conditions, such as reagents, concentration, solvent, or pressure are varied.

Eckert also teaches that methods of conducting a reaction in one embodiment comprise applying carbon dioxide pressure to an organic solvent comprising at least one substrate and a fluorinated catalyst, in an effective amount to solubilize the catalyst; and permitting the fluorinated catalyst to catalyze the reaction of the substrate to form a product. The carbon dioxide can be applied to the solvent at a pressure for example in the range of 40 to 90 bar. The method may include reducing the carbon dioxide gaseous pressure, thereby to cause precipitation of the catalyst, and optionally recovering the catalyst from the reaction product mixture. Examples of reactions include hydrogenation, hydroboration, hydroformylation, cyclopropanation, C--H insertion reactions, oxidation, hydroxylation, isomerization, coupling reactions, olefin metathesis, polymerization, hydrosilylation, hydrocyanation, epoxidation, and Diels-Alder reactions. The catalyst is, for example, an organic compound or an organometallic complex of a main group metal, main group semimetal, transition metal, actinide or lanthanide. In one

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embodiment, the solvent is non-halogenated. In one embodiment, a fluororous support or polymer is present in order to help trap the catalyst upon release of the CO.sub.2 pressure.

Also Eckert teaches a method of conducting a reaction using a fluorinated compound in an organic solvent is provided, comprising applying carbon dioxide gas to an organic solvent, such as a non-halogenated organic solvent, comprising a fluorinated compound, at a pressure effective to solubilize the fluorinated compound during the reaction; permitting the catalyst to catalyze the reaction of the substrate to form a product; and reducing the carbon dioxide gaseous pressure, thereby to cause precipitation of the catalyst; wherein the method further comprises including a fluorinated support material in the organic solvent, wherein the fluorinated support material is capable of adsorbing the catalyst when the carbon dioxide pressure is reduced.

The fluorinated support material is for example a fluorinated polymer, or an inorganic or organic support material comprising fluorinated organic groups that may be attached to the inorganic or organic support material.

See paragraphs 00011-0014.

The instant claims also cover those embodiments of changing temperature to recover reagents or a catalyst. In this regard, Kirk Othmer teaches that crystallization is used for separation, see page 95, and that this methodology involves a change in temperature-dependant solubility of the desired product, see pages 97+. In this regard,

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the use of crystallization to recover products in a mixture is prima facie obvious since Kirk Othmer demonstrates that this methodology is commonplace.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl J. Puttlitz whose telephone number is (571) 272-0645. The examiner can normally be reached on Monday to Friday from 9 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler, can be reached at telephone number (571) 272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



KARL PUTTLITZ  
PATENT EXAMINER

10/10/2007